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Bost House

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Project Specification

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SECTION 014200 - REFERENCES

PART 1 - GENERAL

1.1 GENERAL REQUIREMENTS

A. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

B. Abbreviations and Acronyms: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

Aa	Aluminum Association, Inc. (The)
AAADM	American Association of Automatic Door Manufacturers
AABC	Associated Air Balance Council
AAMA	American Architectural Manufacturers Association
AASHTO	American Association of State Highway and Transportation Officials
AATCC	American Association of Textile Chemists and Colorists
ABAA	Air Barrier Association of America
ABMA	American Bearing Manufacturers Association
ACI	American Concrete Institute
ACPA	American Concrete Pipe Association
AEIC	Association of Edison Illuminating Companies, Inc. (The)
AF&PA	American Forest & Paper Association
AGA	American Gas Association
AHAM	Association of Home Appliance Manufacturers
AHRI	Air-Conditioning, Heating, and Refrigeration Institute, The
AI	Asphalt Institute
AIA	American Institute of Architects (The)

AISC	American Institute of Steel Construction
AISI	American Iron and Steel Institute
AITC	American Institute of Timber Construction
ALSC	American Lumber Standard Committee, Incorporated
AMCA	Air Movement and Control Association International, Inc.
ANSI	American National Standards Institute
AOSA	Association of Official Seed Analysts, Inc.
APA	Architectural Precast Association
APA	APA - The Engineered Wood Association
API	American Petroleum Institute
ARI	Air-Conditioning & Refrigeration Institute
ARMA	Asphalt Roofing Manufacturers Association
ASCE	American Society of Civil Engineers
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers
ASME	ASME International (American Society of Mechanical Engineers International)
ASSE	American Society of Sanitary Engineering
ASTM	ASTM International (American Society for Testing and Materials International)
AWCI	Association of the Wall and Ceiling Industry
AWCMA	American Window Covering Manufacturers Association (Now WCMA)
AWI	Architectural Woodwork Institute
AWPA	American Wood Protection Association (Formerly: American Wood Preservers' Association)
AWS	American Welding Society

AWWA	American Water Works Association
BHMA	Builders Hardware Manufacturers Association
BIA	Brick Industry Association (The)
BICSI	BICSI, Inc.
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International)
BISSC	Baking Industry Sanitation Standards Committee
CCC	Carpet Cushion Council
CDA	Copper Development Association
CEA	Canadian Electricity Association
CEA	Consumer Electronics Association
CFFA	Chemical Fabrics & Film Association, Inc.
CGA	Compressed Gas Association
CIMA	Cellulose Insulation Manufacturers Association
CISCA	Ceilings & Interior Systems Construction Association
CISPI	Cast Iron Soil Pipe Institute
CLFMI	Chain Link Fence Manufacturers Institute
CPA	Composite Panel Association
CPPA	Corrugated Polyethylene Pipe Association
CRI	Carpet and Rug Institute (The)
CRRC	Cool Roof Rating Council
CRSI	Concrete Reinforcing Steel Institute
CSA	Canadian Standards Association
CSA	CSA International (Formerly: IAS - International Approval Services)
CSI	Cast Stone Institute

CSI	Construction Specifications Institute (The)
CSSB	Cedar Shake & Shingle Bureau
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute)
DHI	Door and Hardware Institute
EIA	Electronic Industries Alliance
EIMA	EIFS Industry Members Association
EJCDC	Engineers Joint Contract Documents Committee
EJMA	Expansion Joint Manufacturers Association, Inc.
ESD	ESD Association (Electrostatic Discharge Association)
ETL SEMCO	Intertek ETL SEMCO (Formerly: ITS - Intertek Testing Service NA)
FM Approvals	FM Approvals LLC
FM Global	FM Global (Formerly: FMG - FM Global)
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.
FSA	Fluid Sealing Association
FSC	Forest Stewardship Council
GA	Gypsum Association
GANA	Glass Association of North America
GRI	(Part of GSI)
GS	Green Seal
GSI	Geosynthetic Institute
HI	Hydronics Institute
HI/GAMA	Hydronics Institute/Gas Appliance Manufacturers Association Division of Air-Conditioning, Heating, and Refrigeration Institute (AHRI)
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)

HPVA	Hardwood Plywood & Veneer Association
IAPSC	International Association of Professional Security Consultants
ICBO	International Conference of Building Officials
ICEA	Insulated Cable Engineers Association, Inc.
ICPA	International Cast Polymer Association
ICRI	International Concrete Repair Institute, Inc.
IEC	International Electrotechnical Commission
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The)
IESNA	Illuminating Engineering Society of North America
IEST	Institute of Environmental Sciences and Technology
IGMA	Insulating Glass Manufacturers Alliance
ILI	Indiana Limestone Institute of America, Inc.
ISA	Instrumentation, Systems, and Automation Society, The
ISO	International Organization for Standardization Available from ANSI
ISSFA	International Solid Surface Fabricators Association
ITS	Intertek Testing Service NA (Now ETL SEMCO)
ITU	International Telecommunication Union
KCMA	Kitchen Cabinet Manufacturers Association
LGSEA	Light Gauge Steel Engineers Association
LPI	Lightning Protection Institute
MBMA	Metal Building Manufacturers Association
MCA	Metal Construction Association
MFMA	Maple Flooring Manufacturers Association, Inc.
MFMA	Metal Framing Manufacturers Association, Inc.

MH	Material Handling (Now MHIA)
MHIA	Material Handling Industry of America
MIA	Marble Institute of America
MPI	Master Painters Institute
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc.
NAAMM	National Association of Architectural Metal Manufacturers
NACE	NACE International (National Association of Corrosion Engineers International)
NADCA	National Air Duct Cleaners Association
NAGWS	National Association for Girls and Women in Sport
NAIMA	North American Insulation Manufacturers Association
NBGQA	National Building Granite Quarries Association, Inc.
NCMA	National Concrete Masonry Association
NCTA	National Cable & Telecommunications Association
NEBB	National Environmental Balancing Bureau
NECA	National Electrical Contractors Association
NeLMA	Northeastern Lumber Manufacturers' Association
NEMA	National Electrical Manufacturers Association
NETA	InterNational Electrical Testing Association
NFPA	NFPA (National Fire Protection Association)
NFRC	National Fenestration Rating Council
NGA	National Glass Association
NHLA	National Hardwood Lumber Association
NLGA	National Lumber Grades Authority
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association)

NOMMA	National Ornamental & Miscellaneous Metals Association
NRCA	National Roofing Contractors Association
NRMCA	National Ready Mixed Concrete Association
NSF	NSF International (National Sanitation Foundation International)
NSSGA	National Stone, Sand & Gravel Association
NTMA	National Terrazzo & Mosaic Association, Inc. (The)
PCI	Precast/Prestressed Concrete Institute
PDI	Plumbing & Drainage Institute
PGI	PVC Geomembrane Institute
PTI	Post-Tensioning Institute
RCSC	Research Council on Structural Connections
RFCI	Resilient Floor Covering Institute
RIS	Redwood Inspection Service
SAE	SAE International
SCAQMD	South Coast Air Quality Management District
SCTE	Society of Cable Telecommunications Engineers
SDI	Steel Deck Institute
SDI	Steel Door Institute
SEFA	Scientific Equipment and Furniture Association
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)
SIA	Security Industry Association
SJI	Steel Joist Institute
SMA	Screen Manufacturers Association
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association

SMPTE	Society of Motion Picture and Television Engineers
SPFA	Spray Polyurethane Foam Alliance (Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
SPIB	Southern Pine Inspection Bureau (The)
SPRI	Single Ply Roofing Industry
SSINA	Specialty Steel Industry of North America
SSPC	SSPC: The Society for Protective Coatings
STI	Steel Tank Institute
SWI	Steel Window Institute
TCNA	Tile Council of North America, Inc.
TEMA	Tubular Exchanger Manufacturers Association
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance
TMS	The Masonry Society
TPI	Truss Plate Institute, Inc.
TPI	Turfgrass Producers International
TRI	Tile Roofing Institute
UL	Underwriters Laboratories Inc.
UNI	Uni-Bell PVC Pipe Association
USGBC	U.S. Green Building Council
USITT	United States Institute for Theatre Technology, Inc.
WASTEC	Waste Equipment Technology Association
WCLIB	West Coast Lumber Inspection Bureau
WCMA	Window Covering Manufacturers Association
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association)
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California)

WIC	Woodwork Institute of California (Now WI)
WMMPA	Wood Moulding & Millwork Producers Association
WSRCA	Western States Roofing Contractors Association
WWPA	Western Wood Products Association

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

DIN	Deutsches Institut fur Normung e.V.
IAPMO	International Association of Plumbing and Mechanical Officials
ICC	International Code Council
ICC-ES	ICC Evaluation Service, Inc.
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IAPMO	International Association of Plumbing and Mechanical Officials
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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 014200

SECTION 024119 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Items indicated to be removed and salvaged remain Owner's property. Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner **ready for reuse**. Include fasteners or brackets needed for reattachment elsewhere.

B. Pre-demolition Photographs: Show existing conditions of adjoining construction and site improvements. Submit before Work begins.

C. Lead Paint – facility was tested and found to have lead paint on some exterior siding, interior wall board and trim. Contractor shall include in bid removal and disposal of lead painted demolition materials using approved methods and a current county demo permit.

D. The asbestos NESHAP regulation, 40 CFR, subpart m section 61.145 requires written notification of demolition or renovation operations.
   1. Contractor shall make all required notifications.
   2. California Air Board Asbestos form can be downloaded at: http://www.arb.ca.gov/enf/asbestos/asbestosform.pdf

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. NESHAP Regulation, 40 CFR, Subpart M Section 61.145

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Regulatory Requirements: Comply with EPA regulations and with hauling and disposal regulations of authorities having jurisdiction.

B. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 DEMOLITION

A. Maintain services/systems indicated to remain and protect them against damage during selective demolition operations. Before proceeding with demolition, provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of the building. Job site (construction) water and electric.

B. Locate, identify, shut off, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

C. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.

D. Protect walls, ceilings, floors, and other existing finish work that are to remain.

E. Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

F. Provide temporary weather protection to prevent water leakage and damage to structure and interior areas.

G. Requirements for Building Reuse:

1. Maintain existing building structure (including structural floor and roof decking) and envelope (exterior skin and framing, excluding window assemblies and nonstructural roofing material) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.
2. Maintain existing interior nonstructural elements (interior walls, doors, floor coverings, and ceiling systems) not indicated to be demolished; do not demolish such existing construction beyond indicated limits.

H. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

I. Codes and Regulations: Demolition work shall comply with local ordinances and Safety Codes of State of California and rules and regulations of Industrial Accident Commission of State of California' applicable to demolition work.

J. Safety Precautions: Perform demolition work in such a manner as to prevent damage to existing facilities to remain or to be salvaged, and to prevent injury to public and workmen engaged on site under this or other contracts.

K. Wherever cutting and removal of portions of existing work is indicated, such work shall be sawn in a manner that will produce neat and straight lines, parallel to adjacent surfaces or plumb for vertical surfaces. Execute cutting and demolition by methods which will prevent damage to

other work, and which will provide proper surfaces to receive installation of repairs and new work.

L. Removal: All materials resulting from demolition work, except those items specifically listed to be retained by Owner, shall become property of contractor and shall be removed from premises. All material to be removed needs to be recycled and out of the area as scheduled.

1. Establish haul routes in advance and post flagmen to assure safety of public and workmen.
2. Keep streets (and facilities) free of mud, rubbish, etc. Assume responsibility for any damage resulting from hauling operations and hold Owner free and clear of any liability in connection therewith.

END OF SECTION 024119

SECTION 033000 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: **concrete mix designs**.

B. Ready-Mixed Concrete Producer Qualifications: ASTM C 94/C 94M.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 PEFORMANCE REQUIREMENTS

A. Comply with ACI 301, "Specification for Structural Concrete," and with ACI 117, "Specifications for Tolerances for Concrete Construction and Materials."

2.2 MATERIALS

A. Reinforcing Bars: ASTM A 615/A 615M, Grade 60, deformed.

B. Plain Steel Wire: ASTM A 82, as drawn.

C. Plain-Steel Welded Wire Reinforcement: ASTM A 185, as drawn, flat sheet.

D. Portland Cement: ASTM C 150, Type I or II.

E. Fly Ash: ASTM C 618, Class C or F.

F. Ground Granulated Blast-Furnace Slag: ASTM C 989, Grade 100 or 120.

G. Silica Fume: ASTM C 1240, amorphous silica.

H. Aggregates: ASTM C 33, coarse aggregate or better, graded**, with at least 10 years' satisfactory service in similar applications**.

1. Maximum Coarse-Aggregate Size: **3/4 inch** nominal.

2. Maximum Aggregate Size for Concrete in Insulating Concrete Forms: **1/2 inch**.

I. Air-Entraining Admixture: ASTM C 260.

J. Chemical Admixtures: ASTM C 494, **high-range water reducing and water reducing and retarding**. Do not use calcium chloride or admixtures containing calcium chloride.

K. Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber, or ASTM D 1752, cork or self-expanding cork.

2.3 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301.

B. Normal-Weight Concrete:

1. Minimum Compressive Strength: **2500 psi** at 28 days.
2. Maximum Water-Cementitious Materials Ratio: **0.45**.
3. Slump Limit: **5 inches** plus or minus 1 inch.
4. Air Content: Maintain within range permitted by ACI 301. Do not allow air content of floor slabs to receive troweled finishes to exceed 3 percent.
5. Use fly ash, pozzolan, ground granulated blast-furnace slag, and silica fume as needed to reduce the total amount of portland cement, which would otherwise be used, by not less than 15 percent.
6. For concrete exposed to deicing chemicals, limit use of fly ash to 25 percent replacement of portland cement by weight and granulated blast-furnace slag to 40 percent of portland cement by weight; silica fume to 10 percent of portland cement by weight.

C. Measure, batch, mix, and deliver concrete according to ASTM C 94/C 94M **and ASTM C 1116**.

1. When air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

PART 3 - EXECUTION

3.1 CONCRETING

A. Construct formwork according to ACI 301 and maintain tolerances and surface irregularities within ACI 347R limits of Class A, 1/8 inch for concrete exposed to view and **Class B, 1/4 inch** for other concrete surfaces.

B. Place vapor retarder on prepared subgrade, with joints lapped 6 inches and sealed.

C. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

D. Install construction, isolation, and contraction joints where indicated. Install full-depth joint-filler strips at isolation joints.

E. Place concrete in a continuous operation and consolidate using mechanical vibrating equipment.

F. Protect concrete from physical damage, premature drying, and reduced strength due to hot or cold weather during mixing, placing, and curing.

G. Formed Surface Finish: Smooth-formed finish for concrete exposed to view, coated, or covered by waterproofing or other direct-applied material; rough-formed finish elsewhere.

H. Slab Finishes: Comply with ACI 302.1R for screeding, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces. Provide the following finishes:

1. Scratch finish for surfaces to receive mortar setting beds.
2. Float finish for surfaces to receive waterproofing, roofing, or other direct-applied material.
3. Troweled finish for floor surfaces and floors to receive floor coverings, paint, or other thin film-finish coatings.
4. Trowel and fine-broom finish for surfaces to receive thin-set tile.
5. Nonslip-broom finish to exterior concrete platforms, steps, and ramps.

I. Cure formed surfaces by moisture curing for at least seven days.

J. Begin curing concrete slabs after finishing. **Apply membrane-forming curing compound to concrete**.

K. Polished Concrete Floor Treatment: Apply polished concrete finish system to cured and prepared slabs.

1. Machine grind floor surfaces level and smooth.
2. Apply penetrating liquid floor treatment according to manufacturer's written instructions.
3. Continue polishing with progressively finer polishing pads to gloss level required.
4. Neutralize and clean polished floor surfaces.

L. Owner will engage a testing agency to perform field tests and to submit test reports.

M. Protect concrete from damage. Repair and patch defective areas.

END OF SECTION 033000

SECTION 055113 - METAL PAN STAIRS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: **Product data, Shop Drawings and structural analysis data signed and sealed by a qualified professional engineer registered in the state where Project is located**.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Stairs shall be capable of withstanding a uniform load of 100 lbf/sq. ft. and a concentrated load of 300 lbf applied to an area of 4 sq. in. Uniform and concentrated loads need not be assumed to act concurrently.

B. Railings shall be capable of withstanding a uniform load of 50 lbf/ft. and a concentrated load of 200 lbf applied to handrails and top rails of guards in any direction. Uniform and concentrated loads need not be assumed to act concurrently.

C. Railing infill shall be capable of withstanding a concentrated load of 50 lbf applied horizontally to an area of 1 sq. ft. Infill load and other railing loads need not be assumed to act concurrently.

D. Seismic Performance of Stairs: Metal stairs shall withstand the effects of earthquake motions determined according to **ASCE/SEI 7** and **CBC**.

1. Component Importance Factor: 1.5.

2.2 METALS

A. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Steel Tubing: **ASTM A 500/A 500M (cold formed) or ASTM A 513**.

C. Iron Castings: Either gray iron, ASTM A 48/A 48M, or malleable iron, ASTM A 47/A 47M.

D. Uncoated, Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, either commercial steel, Type B, or structural steel, Grade 25.

E. Uncoated, Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, either commercial steel, Type B, or structural steel, Grade 30.

F. Expanded Metal, Carbon Steel: ASTM F 1267, Class 1 (uncoated).

G. Aluminum Extrusions: ASTM B 221, Alloy 6063-T6.

2.3 MISCELLANEOUS MATERIALS

A. Extruded-Aluminum Nosings: **Solid-abrasive**-type contracting extruded-aluminum units with abrasive filler consisting of aluminum-oxide or silicon-carbide grits, or a combination of both, in an epoxy-resin binder. Apply clear lacquer to concealed surfaces of units set into concrete.

B. Concrete: Comply with Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained concrete with a minimum 28-day compressive strength of 3000 psi.

C. Welded Wire Fabric: ASTM A 185, 6 by 6 inches - W1.4 by W1.4.

2.4 FABRICATION

A. General: Shear and punch metals cleanly and accurately. Remove burrs and ease exposed edges. Form bent-metal corners to smallest radius possible without impairing work.

B. Welding: Use materials and methods that minimize distortion and develop strength of base metals. At exposed connections, finish welds and surfaces smooth.

C. Stair Framing: Fabricate stringers of steel **plates or channels**. Construct platforms of steel **plate or channel** headers and miscellaneous framing members.

D. Metal-Pan Stairs: Form risers, subtread pans, and subplatforms to configurations shown from steel sheet of thickness needed to comply with performance requirements, but not less than 0.067 inch thick.

E. Abrasive-Coating-Finished, Formed-Metal Stairs: Form risers, treads, and platforms from steel sheet of thickness needed to comply with performance requirements, but not less than 0.097 inch thick. Finish tread and platform surfaces with manufacturer's standard, epoxy-bonded abrasive finish.

F. Steel Tube Railings: Fabricate railings to comply with requirements indicated, but not less than that needed to withstand indicated loads.

1. Configuration: **1-1/2-inch square** top and bottom rails, 1-1/2-inch square posts, and 1/2-inch square pickets spaced less than 4 inches clear.
2. Fabricate railings with welded connections. Cope components at connections to provide close fit, or use fittings designed for this purpose.
3. Form changes in direction of railings by bending or by inserting prefabricated fittings.

4. Provide wall brackets, end closures, flanges, miscellaneous fittings, and anchors for interconnecting components and for attaching to other work.
5. Connect posts to stair framing by direct welding.

2.5 FINISHES

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish metal stairs after assembly.

B. Prepare uncoated ferrous metal surfaces to comply with SSPC-SP 3, and paint with a fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Perform cutting, drilling, and fitting required for installing metal stairs. Set units accurately in location, alignment, and elevation, measured from established lines and levels and free of rack.

B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.

C. Place and finish concrete fill for treads and platforms to comply with Section 033000 "Cast-in-Place Concrete." **Install abrasive nosings with anchors fully embedded in concrete.**

END OF SECTION 055113

SECTION 055200 - METAL RAILINGS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: **Shop Drawings**.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 RAILING SYSTEMS

A. Manufacturers: **One of the following:**

1. Steel Pipe and Tube Railings:

a. Pisor Industries, Inc.
b. Wagner, R & B, Inc.; a division of the Wagner Companies.
c. **or Approved Equivalent**.

B. Provide handrails capable of withstanding a uniform load of 50 lbf/ft. and a concentrated load of 200 lbf applied to handrails in any direction. Uniform and concentrated loads need not be assumed to act concurrently.

C. Provide guardrails capable of withstanding a uniform load of 50 lbf/ft. and a concentrated load of 200 lbf applied to guardrail in any direction. Uniform and concentrated loads need not be assumed to act concurrently.

2.2 METALS

A. Recycled Content of Steel Products: Postconsumer recycled content plus one-half of preconsumer recycled content not less than **25** percent.

B. Steel Tubing: ASTM A 500 (cold formed) or ASTM A 513.

C. Steel Pipe: ASTM A 53, Schedule 40.

D. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

E. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

2.3 FABRICATION

A. Assemble railing systems in shop to the greatest extent possible. Use connections that maintain structural value of joined pieces.

B. Form changes in direction of railing and handrail members by **bending**.

C. Fabricate railing systems and handrails for connecting members **by welding**.

D. Provide manufacturer's standard wall brackets, flanges, miscellaneous fittings, and anchors to connect handrail and railing members to other construction.

E. Provide wall returns at ends of wall-mounted handrails.

2.4 FINISHES

A. Steel Railings and Guardrails: **Cleaned, primed and painted**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Fit exposed connections accurately together to form tight, hairline joints.

B. Attach handrails to wall with wall brackets.

C. Set exterior railing and guardrails in sleeves:
1. Drill hole diameter at least ¾ in. larger than O.D. of post for grouting.
2. Clean dust and foreign matter from sleeves.
3. Moisten interior of holes and surrounding surfaces with clean water.
4. Prepare and use cement in accord with manufacturer’s directions.
5. Proprietary fast-drying cement is preferred; sulphur is not acceptable.
6. Place railing in position and brace until grout sets.
7. Pour mixture into annular space until it overflows the hole.
8. Wipe off excess, (leave 1/8 in. build-up, sloped away from post at exterior conditions).

END OF SECTION 055200

SECTION 061000 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for **wood-preservative treated wood, engineered wood products and metal framing anchors**.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

B. Engineered Wood Products: Acceptable to authorities having jurisdiction and for which current model code research or evaluation reports exist that show compliance with building code in effect for Project.

1. Allowable Design Stresses: Engineered wood products shall have allowable design stresses, as published by manufacturer, that meet or exceed those indicated. Manufacturer's published values shall be demonstrated by comprehensive testing.

2.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA U1; Use Category UC2 **for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground**.

1. Use treatment containing no arsenic or chromium. **Do not use inorganic boron (SBX) for sill plates.**
2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for **items indicated on Drawings, and the following:**

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, blocking, **furring, stripping,** and similar concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground.
4. Wood plates that are installed over concrete.

2.3 FRAMING

A. Dimension Lumber:

1. Maximum Moisture Content: **15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness**.
2. Non-Load-Bearing Interior Partitions: **No.2**
3. Framing Other Than Non-Load-Bearing Interior Partitions: **No. 2 Douglas fir-larch (north**.
4. Exposed Framing: Provide material hand-selected for uniformity of appearance and freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot-holes, shake, splits, torn grain, and wane.

    a. Species: As specified for framing other than non-load-bearing interior partitions.
    b. Grade: **Select Structural**.

2.4 MISCELLANEOUS LUMBER

A. Miscellaneous Dimension Lumber: **Construction, or No. 2** grade with **15** percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

2.5 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners **with hot-dip zinc coating complying with ASTM A 153/A 153M**.

1. Tapcon Screw Anchor: ICC ESR-2202.
2. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

B. Metal Framing Anchors: Structural capacity, type, and size indicated.

1. Manufacturers: **One of the following:**
2. Basis-of-Design Product: **Product indicated on Drawings** or a comparable product of one of the following:

    a. Cleveland Steel Specialty Co.
    b. KC Metals Products, Inc.
    c. Phoenix Metal Products, Inc.
    d. Simpson Strong-Tie Co., Inc.

e. USP Structural Connectors.

3. Use anchors made from hot-dip galvanized steel complying with ASTM A 653/A 653M, G60 coating designation for interior locations where stainless steel is not indicated.
4. Use anchors made from stainless steel complying with ASTM A 666, Type 304 for exterior locations and where indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Do not splice structural members between supports unless otherwise indicated.

D. Securely attach rough carpentry to substrates, complying with the following:

1. ICC ESR-2202 for Tapcon Screw Anchor.
2. Published requirements of metal framing anchor manufacturer.
3. **Table 2304.9.1, "Fastening Schedule," in the CBC**.

END OF SECTION 061000

SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for treated wood.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

2.2 TREATED MATERIALS

A. Preservative-Treated Materials: AWPA U1; Use Category UC2 **for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground**.

1. Use treatment containing no arsenic or chromium. **Do not use inorganic boron (SBX) for sill plates.**
2. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent.
3. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

B. Provide preservative-treated materials for **items indicated on Drawings, and the following:**

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, blocking, **furring, stripping,** and similar concealed members in contact with masonry or concrete.
3. Wood framing members that are less than 18 inches above the ground.
4. Wood floor plates that are installed over concrete slabs-on-grade.

2.3 LUMBER

A. Interior Partition Framing: **Construction, Stud, or No. 2 Western woods: WCLIB or WWPA** with **19** percent maximum moisture content.

B. Miscellaneous Dimension Lumber: **Construction, or No. 2** grade with **19** percent maximum moisture content of any species. Provide for nailers, blocking, and similar members.

C. Utility Shelving: **White melamine.**

2.4 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: Plywood, **Exposure 1, C-D Plugged**, fire-retardant treated, not less than [**3/4-inch** nominal thickness.

2.5 FASTENERS

A. Fasteners: Size and type indicated. Where rough carpentry is exposed to weather, in ground contact, or in area of high relative humidity, provide fasteners **with hot-dip zinc coating complying with ASTM A 153/A 153M**.

1. **Table 2304.9.1, "Fastening Schedule," in the CBC**.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set miscellaneous rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Securely attach miscellaneous rough carpentry to substrates, complying with the following:
1. **Table 2304.9.1, "Fastening Schedule," in the CBC**.

END OF SECTION 061053

SECTION 061533 - WOOD PATIO DECKING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for **plastic decking and decking fasteners**.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Lumber: Provide dressed lumber, S4S, marked with grade stamp of inspection agency.

B. Maximum Moisture Content:

1. Boards: **19** percent.
2. Dimension Lumber: **19 percent**
3. Timber. **No limit**.

2.2 WOOD MATERIALS

A. Dimension Lumber Framing

1. Deck **and Stair** Framing: Pressure Treated **Construction or No. 2** grade and **any of** the following species:

a. Hem-fir (north); NLGA.
b. Southern pine; SPIB.
c. Douglas fir-larch; WCLIB or WWPA.
d. Spruce-pine-fir; NLGA.
e. Douglas fir-south; WWPA.
f. Hem-fir; WCLIB or WWPA.
g. Douglas fir-larch (north); NLGA.
h. Spruce-pine-fir (south); NeLMA, WCLIB, or WWPA.

2. Dimension Lumber Posts: Pressure Treated **Construction or No. 2** grade and **any of** the following species:

   a. Hem-fir or hem-fir (north); NLGA, WCLIB, or WWPA.
   b. Douglas fir-larch, Douglas fir-larch (north), or Douglas fir-south; NLGA, WCLIB, or WWPA.
   c. Mixed southern pine; SPIB.

2.3 TREATED MATERIALS

A. Preservative-Treated Boards and Dimension Lumber: AWPA U1; Use Category UC3b.

B. Provide preservative-treated materials for **all exterior rough carpentry unless otherwise indicated.**

1. Framing members.
2. Sills and ledgers.
3. Members in contact with masonry or concrete.
4. Posts.
5. Stair treads.

2.4 PLASTIC DECKING

A. Plastic Lumber, General: Products acceptable to authorities having jurisdiction and for which current model code evaluation reports exist that show compliance with building code in effect for Project for indicated occupancy and type of construction.

1. Allowable loads and spans, as documented in evaluation reports or in information referenced in evaluation reports, shall not be less than design loads and spans indicated.

B. Composite Plastic Lumber: **Solid** shapes made from a mixture of cellulose fiber and polyethylene or polypropylene.

1. Manufacturers: **One of the following:**

   a. TimberTech
   b. Trex
   c. Azex

C. Decking Size: **1-1/4 by 6 nominal, 1 by 5-1/2 inches actual**.

D. Configuration: Provide product with **grooved edges designed for fastening with concealed splines**.

E. Surface Texture: **Woodgrain**.

2.5 MISCELLANEOUS PRODUCTS

A. Fasteners: Use **fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M or ASTM F 2329** unless otherwise indicated.

1. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.
2. Power-Driven Fasteners: ICC-ES AC70.

B. Metal Framing Anchors: Structural capacity, type, and size indicated, made from **hot-dip galvanized steel complying with ASTM A 653/A 653M, G60 coating**.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

C. Deck Splines: Corrosion-resistant metal or UV-resistant plastic splines designed to fit in grooves routed into the sides of decking material and to be fastened to deck framing with screws.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

D. Deck Clips: Black-oxide-coated stainless-steel clips designed to be fastened to deck framing with screws, and to secure decking material with teeth.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

E. Deck Tracks: Formed metal strips designed to be fastened to deck framing and to secure decking material from underside with screws. Made from epoxy-powder-coated, hot-dip galvanized steel or stainless steel.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Locate nailers, blocking, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA WCD1 unless otherwise indicated.

C. Securely attach work to substrates, complying with the following:

1. ICC-ES AC70 for power-driven fasteners.
2. "Fastening Schedule" in ICC's International Building Code.
3. "Fastener Schedule for Structural Members" and "Alternate Attachments" in ICC's International Residential Code for One- and Two-Family Dwellings.

D. Secure decking to framing with [**deck splines**] [**deck clips**] [**deck tracks**] [**or**] [**screws**].

E. Secure stair treads and risers by gluing and **screwing** to carriages. Countersink fastener heads, fill flush, and sand filler. Extend treads over carriages **and finish with bullnose edge**.

F. Railing Installation: Countersink fastener heads, fill flush, and sand filler.

1. Fit balusters to railings, glue, and **screw** in place.
2. Secure newel posts to stringers and risers with **through bolts.**
3. Secure wall rails with metal brackets. Fasten freestanding railings to newel posts and to trim at walls with countersunk-head wood screws or rail bolts and glue.

END OF SECTION 061533

SECTION 061600 - SHEATHING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for **preservative-treated plywood**.

PART 2 - PRODUCTS

2.1 WOOD PANEL PRODUCTS, GENERAL

A. Plywood: DOC PS 1.

B. Oriented Strand Board: DOC PS 2.

2.2 TREATED PLYWOOD

A. Preservative-Treated Plywood: AWPA U1; Use Category UC2.

1. Use treatment containing no arsenic or chromium.
2. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.

B. Provide preservative-treated plywood for **items indicated on Drawings and plywood in contact with masonry or concrete or used with waterproof decking**

2.3 WALL SHEATHING

A. Plywood Wall Sheathing: **Refer to Structural Documents** sheathing.

B. Oriented-Strand-Board Wall Sheathing: **Refer to Structural Documents** sheathing.

C. Paper-Surfaced Gypsum Wall Sheathing: ASTM C 1396/C 1396M, gypsum sheathing; with water-resistant-treated core.

1. Manufacturers: **One of the following:**

a. American Gypsum.
b. G-P Gypsum Corporation.
c. National Gypsum Company.
d. United States Gypsum Co.

D. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.

1. Products: **One of the following:**

a. CertainTeed Corporation; GlasRoc.
b. G-P Gypsum Corporation; Dens-Glass Gold.
c. National Gypsum Company; Gold Bond e(2)XP.
d. United States Gypsum Co.; Securock.

E. Cementitious Backer Units: ASTM C 1325, Type A.

1. Products: **One of the following:**

a. C-Cure; C-Cure Board 990.
b. Custom Building Products; Wonderboard.
c. USG Corporation; DUROCK Cement Board.

F. Fiberboard Wall Sheathing: AHA A194.1, Type IV, Grade 1 (Regular).

2.4 ROOF SHEATHING

A. Plywood Roof Sheathing: **Refer to Structural Documents** sheathing.

B. Oriented-Strand-Board Roof Sheathing: **Refer to Structural Documents** sheathing.

1. Manufacturers: **One of the following:**

a. Atlas Roofing Corporation.
b. Cornell Corporation.
c. Dow Chemical Company (The).
d. Johns Manville; Berkshire Hathaway Inc.
e. Rmax, Inc.

C. Composite Nail Base Insulated Roof Sheathing: Polyisocyanurate foam with oriented strand board laminated to one face complying with ASTM C 1289, Type V.

2.5 SUBFLOORING AND UNDERLAYMENT

A. Combination Subfloor-Underlayment:

1. Plywood Combination Subfloor-Underlayment: DOC PS 1, **Exposure 1, Structural I, Underlayment** single-floor panels.
2. Oriented-Stand-Board Combination Subfloor-Underlayment: Exposure 1 single-floor panels.

2.6 MISCELLANEOUS PRODUCTS

A. Fasteners: Size and type indicated.

1. For roof **and wall** sheathing, provide fasteners **with hot-dip zinc coating complying with ASTM A 153/A 153M**.
2. Power-Driven Fasteners: CABO NER-272.

B. Sheathing Joint-and-Penetration Treatment Materials:

1. Sealant for Glass-Mat Gypsum Sheathing: Silicone emulsion sealant, recommended by tape and sheathing manufacturers for application indicated.
2. Sheathing Tape for Glass-Mat Gypsum Sheathing: Self-adhering, glass-fiber tape recommended by sheathing and tape manufacturers for application indicated.
3. Sheathing Tape for Foam-Plastic Sheathing: Pressure-sensitive plastic tape recommended by sheathing manufacturer for sealing joints and penetrations in sheathing.

C. Adhesives for Field Gluing Panels to Framing: APA AFG-01.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Securely attach to substrates, complying with the following:

1. CABO NER-272 for power-driven fasteners.
2. **Table 2304.9.1, "Fastening Schedule," in the CBC**.

B. Fastening Methods:

1. Combination Subfloor-Underlayment:

a. **Glue and nail** to wood framing.
b. Screw to cold-formed metal framing.

2. Subflooring:

a. **Glue and nail** to wood framing.
b. Screw to cold-formed metal framing.

3. Wall and Roof Sheathing:

a. **Nail** to wood framing.
b. Screw to cold-formed metal framing.

4. Underlayment:

a. **Nail or staple** to subflooring.

C. Glass-Mat Gypsum Sheathing Joint-and-Penetration Treatment: Seal sheathing joints and penetrations according to sheathing manufacturer's written instructions.

D. Install cementitious backer units and treat joints according to ANSI A108.11 and manufacturer's written instructions for type of application indicated.

END OF SECTION 061600

SECTION 062000 - FINISH CARPENTRY

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Samples for **siding, moldings and trim**.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Lumber: DOC PS 20 and grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Softwood Plywood: DOC PS 1.

C. MDF: ANSI A208.2, Grade 130**, made with binder containing no urea-formaldehyde resin**.

D. Particleboard: ANSI A208.1, **Grade M-2, made with binder containing no urea-formaldehyde resin**.

E. Melamine-Faced Particleboard: Particleboard complying with ANSI A208.1, Grade M-2, finished on both faces with thermally fused, melamine-impregnated decorative paper.

2.2 EXTERIOR FINISH CARPENTRY

A. Exterior Trim: Laminated Veneer Lumber, **Rough-Sawn Face, 2x4, 2x6, 2x8, 2x10**

1. Manufacturers: **One of the following:**

a. Georgia-Pacific Corp.
b. Pacific Wood Laminates, Inc.
c. LP Building Products

B. Plywood Siding: APA-rated siding, **5/8-inch** thick, **T1-11, 8” O.C., pine faced, rough sawn.**

1. Manufacturers: **One of the following:**

   a. Georgia-Pacific Corp.
   b. Pacific Wood Laminates, Inc.
   c. Roseburg Forest Products Co.

2.3 SHELVING AND CLOTHES RODS

A. Shelving: **3/4-inch melamine-faced particleboard with radiused and filled front edge.**

B. Clothes Rods: 1-1/2-inch- diameter, **clear, kiln-dried Douglas fir or southern pine**.

C. Shelf Brackets with Rod Support: BHMA A156.16, B04051; prime-painted formed steel.

2.4 MISCELLANEOUS MATERIALS

A. Fasteners for Exterior Finish Carpentry: **hot-dip galvanized steel**.

B. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer.

1. Wood glue shall have a VOC content of 30 g/L or less.
2. Use waterproof resorcinol glue for exterior applications.

C. Insect Screening for Soffit Vents: **Aluminum**.

D. Continuous Soffit Vents: Aluminum hat channel shape with stamped louvers or perforations.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Condition interior finish carpentry in installation areas for 24 hours before installing.

B. Prime and backprime lumber for painted finish exposed on the exterior. Cut to length and prime ends.

C. Install finish carpentry level, plumb, true, and aligned with adjacent materials. Scribe and cut to fit adjoining work. Refinish and seal cuts.

1. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining exterior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.
2. Install stairs with no more than 3/16-inch variation between adjacent treads and risers and with no more than 3/8-inch variation between largest and smallest treads and risers within each flight.

D. Install standing and running trim with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long

except where necessary. Stagger joints in adjacent and related trim. Cope at returns and inside corners and miter at outside corners.

E. Nail siding at each stud. Do not allow nails to penetrate more than one thickness of siding, unless otherwise recommended by siding manufacturer. Seal joints at inside and outside corners and at trim locations.

F. Select and arrange paneling for best match of adjacent units. Install with uniform tight joints.

END OF SECTION 062000

SECTION 064100 - ARCHITECTURAL WOOD CASEWORK

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: **Shop Drawings and Samples showing the full range of colors available for each type of finish.**

B. Environmental Limitations: Do not deliver or install woodwork until building is enclosed, wet work is completed, and HVAC system is operating.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 ARCHITECTURAL CABINETS

A. Quality Standard: AWI, AWMAC, and WI's "Architectural Woodwork Standards."

B. Plastic-Laminate Cabinets: **Custom** grade.

1. Type of Construction: **Frameless**.
2. Cabinet and Door and Drawer Front Interface Style: **Flush overlay**.
3. Laminate Cladding: Horizontal surfaces other than tops, **Grade HGS**; postformed surfaces, Grade HGP; vertical surfaces, **Grade HGS**; edges, **Grade HGS**; semiexposed surfaces, **thermoset decorative panels**.
4. Drawer Sides and Backs: **Thermoset decorative panels**.
5. Drawer Bottoms: **Thermoset decorative panels**.

2.2 MATERIALS

A. Wood Moisture Content: **5 to 10** percent.

B. Medium-Density Fiberboard: ANSI A208.2, Grade 130**, made with binder containing no urea formaldehyde**.

C. Particleboard: **ANSI A208.1, Grade M-2, made with binder containing no urea formaldehyde**.

D. High-Pressure Decorative Laminate: NEMA LD 3.

1. Manufacturers: **One of the following:**

a. Abet Laminati, Inc.
b. Formica Corporation.
c. Lamin-Art, Inc.
d. Panolam Industries International, Inc.
e. Wilsonart International; Div. of Premark International, Inc.

2.3 CABINET HARDWARE AND ACCESSORY MATERIALS

A. Frameless Concealed Hinges (European Type): BHMA A156.9, B01602, **135** degrees of opening**, self-closing**.

B. Wire Pulls: Back mounted, solid **metal**, **4 inches long, 5/16 inch in diameter**.

C. Catches: **Push-in magnetic catches, BHMA A156.9, B03131**.

D. Adjustable Shelf Standards and Supports: **BHMA A156.9, B04071; with shelf rests, B04081**

E. Shelf Rests: BHMA A156.9, B04013; **metal**.

F. Drawer Slides: BHMA A156.9, B05091.

1. Box Drawer Slides: **Grade 1HD-100**.
2. File Drawer Slides: **Grade 1HD-100**.
3. Pencil Drawer Slides: **Grade 1**.
4. Keyboard Slides: **Grade 1HD-100**.
5. Trash Bin Slides: **Grade 1HD-100**.

G. Drawer Locks: BHMA A156.11, E07041.

H. Exposed Hardware Finishes: Comply with BHMA A156.18 for BHMA code number indicated.

1. Finish: **Satin Chrome: BHMA 626 or BHMA 652**.

I. Furring, Blocking, Shims, and Hanging Strips: **Softwood or hardwood** lumber, kiln dried to 15 percent moisture content.

2.4 FABRICATION

A. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition cabinets to average prevailing humidity conditions in installation areas.

B. Install cabinets to comply with referenced quality standard for grade specified.

C. Install cabinets level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb (including tops) to a tolerance of 1/8 inch in 96 inches.

D. Scribe and cut cabinets to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor cabinets to anchors or blocking built in or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing. Use fine finishing nails **or finishing screws** for exposed nailing, countersunk and filled flush.

F. Cabinets: Install so doors and drawers are accurately aligned. Adjust hardware to center doors and drawers in openings and to provide unencumbered operation.

1. Fasten wall cabinets through back, near top and bottom, at ends and not more than 16 inches o.c. with **No. 10 wafer-head screws sized for 1-inch penetration into wood framing, blocking, or hanging strips**.

END OF SECTION 064100

SECTION 064600 - WOOD TRIM

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Section includes standing and running trim, jambs, and frames.

B. Installer Qualifications: Fabricator of products.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

PART 2 - PRODUCTS

2.1 WOOD TRIM

A. Quality Standard: AWI, AWMAC, and WI's "Architectural Woodwork Standards."

B. Exterior Trim: Laminated Veneer Lumber, **Rough-Sawn Face, 2x4, 2x6, 2x8, 2x10**

1. Manufacturers: **One of the following:**

a. Georgia-Pacific Corp.
b. Pacific Wood Laminates, Inc.
c. LP Building Products

2.2 MATERIALS

A. Wood Moisture Content for Exterior Woodwork: **9 to 15** percent.

B. Blocking and Shims: **Softwood or hardwood** lumber, kiln dried.

C. Water-Repellent Preservative-Treated Materials: Comply with AWPA N1 (dip, spray, flood, or vacuum-pressure treatment) for woodwork items indicated to receive water-repellent preservative treatment.

D. Fasteners for Exterior Wood Trim:

1. Nails: **hot-dip galvanized or stainless steel**.
2. Screws: **hot-dip galvanized or stainless steel**.

2.3 FABRICATION

A. Complete fabrication to maximum extent possible before shipment to Project site. Disassemble components only as necessary for shipment and installation. Where necessary for fitting at site, provide ample allowance for scribing, trimming, and fitting.

B. Backout or groove backs of flat trim members and kerf backs of other wide, flat members, except for members with ends exposed in finished work.

2.4 SHOP PRIMING

A. Shop prime wood trim for opaque finish with one coat of specified wood primer.

B. Backprime with one coat of sealer or primer, compatible with finish coats. **Apply two coats to surfaces installed in contact with concrete or masonry and to end-grain surfaces.**

PART 3 - EXECUTION

3.1 INSTALLATION

A. Before installation, condition wood trim to average prevailing humidity conditions in installation areas.

B. Install wood trim to comply with referenced quality standard for grade specified.

C. Install wood trim level, plumb, true, and straight. Shim as required with concealed shims. Install level and plumb to a tolerance of 1/8 inch in 96 inches.

D. Scribe and cut wood trim to fit adjoining work, refinish cut surfaces, and repair damaged finish at cuts.

E. Anchor wood trim to anchors or blocking built in or directly attached to substrates. Fasten with countersunk concealed fasteners and blind nailing. Use fine finishing nails **or finishing screws** for exposed nailing, countersunk and filled flush with woodwork.

F. Exterior Standing and Running Trim: Install with minimum number of joints possible, using full-length pieces (from maximum length of lumber available) to greatest extent possible. Do not use pieces less than 36 inches long, except where shorter single-length pieces are necessary. Scarf running joints and stagger in adjacent and related members.

END OF SECTION 064600

SECTION 072100 - THERMAL INSULATION

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Surface-Burning Characteristics: According to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 INSULATION PRODUCTS

A. Glass-Fiber-Blanket Insulation: ASTM C 665, **Type I, unfaced** with flame-spread and smoke-developed indexes of 25 and 450, respectively.

1. Manufacturers: **One of the following:**

a. CertainTeed Corporation.
b. Johns Manville.
c. Knauf Insulation.
d. Owens Corning.

2.2 ACCESSORIES

A. Eave Ventilation Troughs: Preformed, rigid fiberboard or plastic sheets designed to fit between roof framing members and to provide cross-ventilation between insulated attic spaces and vented eaves.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install insulation in areas and in thicknesses indicated or required to produce R-values indicated. Cut and fit tightly around obstructions and fill voids with insulation.

B. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

C. Install eave ventilation troughs between roof framing members in insulated attic spaces at vented eaves.

D. Except for loose-fill insulation and insulation that is friction fitted in stud cavities, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

E. Install sheet radiant barriers according to ASTM C 1158.

F. Extend vapor retarder to extremities of areas to be protected from vapor transmission. Secure in place with adhesives or other anchorage. Locate seams at framing members, overlap, and seal with tape. Seal joints caused by pipes, conduits, electrical boxes, and similar items with tape.

END OF SECTION 072100

SECTION 072500 - WEATHER BARRIERS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: ICC-ES evaluation reports for water-resistive barrier.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 WATER-RESISTIVE BARRIERS

A. Building Paper: ASTM D 226, Type 1 (No. 15 asphalt-saturated organic felt), unperforated.

B. Building Paper: Kraft building paper with not less than 50 lbf/in. tensile strength, 1-hour water resistance, and 75 g/sq. m x 24 h water-vapor transmission.

C. Building Wrap: ASTM E 1677, Type I air barrier; with water-vapor permeance not less than **5 perms** per ASTM E 96/E 96M, Desiccant Method (Procedure A); flame-spread and smoke-developed indexes not greater than 25 and 450, respectively, when tested according to ASTM E 84; UV stabilized; and acceptable to authorities having jurisdiction.

1. Products: **One of the following:**

   a. Dow Chemical Company (The); Styrofoam Weathermate Plus Brand Housewrap.
   b. DuPont (E. I. du Pont de Nemours and Company); Tyvek [CommercialWrap] [StuccoWrap] [HomeWrap] [HomeWrap and HeaderWrap].
   c. Raven Industries Inc.; Fortress Pro Weather Protective Barrier.

2.2 ACCESSORIES

A. Flexible Flashing: Adhesive **butyl rubber** compound, bonded to plastic film or spunbonded polyolefin, with an overall thickness of 0.030 inch.

1. Products: **One of the following:**

   a. DuPont (E. I. du Pont de Nemours and Company); DuPont Flashing Tape.

b. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; Vycor Butyl Self Adhered Flashing.
c. Raven Industries Inc.; Fortress Flashshield.
d. Carlisle Coatings & Waterproofing; CCW-705-TWF Thru-Wall Flashing.
e. Fortifiber Building Systems Group; [Fortiflash 25] [Fortiflash 40].
f. Grace Construction Products, a unit of W. R. Grace & Co. - Conn.; [Vycor Plus Self-Adhered Flashing] [Vycor V40 Self-Adhered Flashing].

B. Building Wrap Tape: Pressure-sensitive plastic tape recommended by building-wrap manufacturer for sealing joints and penetrations in building wrap.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Building Paper Installation:

1. Apply building paper immediately after sheathing is installed.
2. Apply horizontally with a 2-inch overlap and a 6-inch end lap.
3. Seal seams, edges, fasteners, and penetrations with tape.
4. Extend into jambs of openings and seal corners with [**flexible flashing**].

B. Building Wrap Installation:

1. Apply building wrap immediately after sheathing is installed.
2. Seal seams, edges, fasteners, and penetrations with building wrap tape.
3. Extend into jambs of openings and seal corners with building wrap tape.

C. Flexible Flashing Installation:

1. Prime substrates as recommended by flashing manufacturer.
2. Lap seams and junctures with other materials at least 3 inches, except that at flashing flanges of other construction, laps need not exceed flange width.
3. Lap flashing over water-resistive barrier at bottom and sides of openings.
4. Lap water-resistive barrier over flashing at heads of openings.
5. After flashing has been applied, roll surfaces with a hard rubber or metal roller.

END OF SECTION 072500

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data**, Samples,** and ICC-ES evaluation reports.

B. Warranties: Manufacturer's standard written warranty, signed by manufacturer agreeing to promptly repair or replace asphalt shingles that fail in materials for a period of **25** years, prorated, with first **five** years nonprorated.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Exterior Fire-Test Exposure: ASTM E 108 or UL 790, Class A. Identify products with appropriate markings of testing and inspecting agency acceptable to authorities having jurisdiction.

2.2 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

A. Laminated-Strip, SBS-Modified Asphalt Shingles: ASTM D 3462/D 3462M, laminated, multi-ply overlay construction, mineral-granule surfaced, and self-sealing; complying with UL 2218, Class 4. **To Match Existing** cut butt edge.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

2.3 ACCESSORIES

A. Felts: **ASTM D 226/D 226M.**

B. Self-Adhering Sheet Underlayment: ASTM D 1970/D 1970M, SBS-modified asphalt; mineral-granule or slip-resisting-polyethylene surfaced; with release paper backing; cold applied.

1. <Double click here to find, evaluate, and insert list of manufacturers and products.>

C. Roofing Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel shingle nails, minimum 0.120-inch diameter, of sufficient length to penetrate 3/4 inch into solid wood decking or extend at least 1/8 inch through OSB or plywood sheathing.

1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.

D. Felt-Underlayment Nails: Aluminum, stainless-steel, or hot-dip galvanized-steel wire with low-profile capped heads or disc caps, 1-inch minimum diameter.

E. Sheet Metal Flashing and Trim: Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Sheet Metal: **Zinc-tin alloy-coated steel**.
2. Drip Edge: Formed sheet metal with at least a 2-inch roof deck flange and a 1-1/2-inch fascia flange with a 3/8-inch drip at lower edge.
3. Open-Valley Flashing: Fabricate with 1-inch high, inverted-V profile at center of valley and equal flange widths of **10 inches**.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with recommendations in ARMA's "Residential Asphalt Roofing Manual" and with asphalt shingle recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems."

B. Apply self-adhering sheet underlayment at eaves and rakes from edges of roof to at least **24 inches** inside exterior wall line.

C. Apply self-adhering sheet underlayment at valleys extending 18 inches on each side.

D. Install felt underlayment on roof deck not covered by self-adhering sheet underlayment.

E. Install valleys complying with NRCA instructions. Construct **sheet metal open** valleys.

F. Install metal flashings to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

G. Install first and remaining courses of asphalt shingles, stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses and maintaining uniform exposure.

END OF SECTION 073113

SECTION 074600 - SIDING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data, Samples, and ICC-ES evaluation reports.

B. Warranties: Manufacturer's standard from in which siding manufacturer agrees to repair or replace siding that fails in materials or workmanship within **10** years. Failures include, but are not limited to, cracking, deforming, **fading,** or otherwise deteriorating beyond normal weathering.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 SIDING

A. Plywood Siding: APA-rated siding, **5/8-inch** thick, **T1-11, 8" O.C., dura temp-pre primed, rough sawn, plain. 50 year warranty or equal MFG-Roseburg**

Manufacturers: Roseburg

B. Fiber-Cement Siding: ASTM C 1186, Type A, Grade II, fiber-cement board, noncombustible when tested according to ASTM E 136; with a flame-spread index of 25 or less when tested according to ASTM E 84. **Factory primed.**

1. Manufacturers: **One of the following:**

   a. James Hardie
   b. Allura
   c. CertainTeed

2. Labeling: Provide fiber-cement siding that is tested and labeled according to ASTM C 1186.
3. Horizontal Pattern: Boards **6-1/4 to 6-1/2 inches** wide in **plain** style with **smooth** texture.

2.2 ACCESSORIES

A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration.

1. Provide accessories **matching color and texture of**] adjacent siding unless otherwise indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install fiber-cement **siding** and related accessories.

1. Install fasteners no more than **24 inches** o.c.

END OF SECTION 074600

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Comply with SMACNA's "Architectural Sheet Metal Manual." Conform to dimensions and profiles shown unless more stringent requirements are indicated.

C. Coordinate installation of sheet metal flashing and trim with interfacing and adjoining construction to provide a leakproof, secure, and noncorrosive installation.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 SHEET METAL

A. Aluminum Sheet: ASTM B 209, alloy as standard with manufacturer for finish required, not less than 0.032 inch thick; and **finished as follows:**

1. Finish: Manufacturer's standard **two-coat fluoropolymer system with color coat containing not less than 70 percent PVDF resin by weight**
2. Concealed Finish: Manufacturer's standard white or light-colored acrylic or polyester backer finish.

B. Metallic-Coated Steel Sheet: Galvanized structural-steel sheet, ASTM A 653/A 653M, G90, or aluminum-zinc alloy-coated structural-steel sheet, ASTM A 792/A 792M, Class AZ50 coating designation, Grade 40; **0.022-inch** nominal thickness.

1. Finish: Manufacturer's standard **wo-coat fluoropolymer system with color coat containing not less than 70 percent PVDF resin by weight**
2. Concealed Finish: Manufacturer's standard white or light-colored acrylic or polyester backer finish.

2.2 ACCESSORIES

A. Felt Underlayment: ASTM D 226, **Type II (No. 30)**, asphalt-saturated organic felts.

B. Self-Adhering Sheet Underlayment, High Temperature: Butyl or SBS-modified asphalt; slip-resisting-polyethylene surfaced; with release paper backing; cold applied. Stable after testing at 240 deg F and passes after testing at minus 20 deg F; ASTM D 1970.

C. Slip Sheet: Building paper, 3-lb/100 sq. ft. minimum, rosin sized.

D. Fasteners: Wood screws, annular-threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners.

1. Exposed Fasteners: Heads matching color of sheet metal roofing using plastic caps or factory-applied coating.
2. Spikes and Ferrules: Same material as gutter; with spike with ferrule matching internal gutter width.
3. Fasteners for Copper: Copper, hardware bronze, or Series 300 stainless steel.
4. Fasteners for Aluminum Sheet: Aluminum or Series 300 stainless steel.
5. Fasteners for Stainless-Steel Sheet: Series 300 stainless steel.
6. Fasteners for Zinc-Tin Alloy-Coated Stainless-Steel Sheet: Series 300 stainless steel.
7. Fasteners for Metallic-Coated Steel Sheet: Hot-dip galvanized steel or Series 300 stainless steel.

E. Solder for Copper: ASTM B 32, Grade Sn50.

F. Solder for Stainless Steel: ASTM B 32, Grade Sn60, with acid flux of type recommended by stainless-steel sheet manufacturer.

G. Solder for Zinc-Tin Alloy-Coated Stainless Steel: ASTM B 32, 100 percent tin.

H. Butyl Sealant: ASTM C 1311, solvent-release butyl rubber sealant.

I. Bituminous Coating: Cold-applied asphalt emulsion complying with ASTM D 1187.

2.3 FABRICATION

A. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Expansion Provisions: Where lapped expansion provisions cannot be used, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with butyl sealant concealed within joints.

C. Fabrication Tolerances: Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified in MCA's "Guide Specification for Residential Metal Roofing."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with SMACNA's "Architectural Sheet Metal Manual." Allow for thermal expansion; set true to line and level. Install Work with laps, joints, and seams permanently watertight and weatherproof; conceal fasteners where possible.

B. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

C. Fabricate nonmoving seams in sheet metal with flat-lock seams. **For aluminum, form seams and seal with epoxy seam sealer. Rivet joints for additional strength.**

D. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches, except where pretinned surface would show in finished Work.

1. Do not solder **metallic-coated steel and aluminum** sheet.
2. Do not pretin zinc-tin alloy-coated stainless steel.
3. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

E. Aluminum Flashing and Trim: Coat back side of aluminum flashing and trim with bituminous coating where it will contact wood, ferrous metal, or cementitious construction.

F. Separate dissimilar metals with a bituminous coating or polymer-modified, bituminous sheet underlayment.

END OF SECTION 076200

SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data and color Samples.

B. Environmental Limitations: Do not proceed with installation of joint sealants when ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 JOINT SEALANTS

A. Low-Emitting Materials: Sealants shall comply with the following limits for VOC content:

1. Architectural Sealants: 250 g/L.
2. Nonmembrane Roof Sealants: 300 g/L.
3. Single-Ply Roof Membrane Sealants: 450 g/L.
4. Other Sealants: 420 g/L.
5. Sealant Primers for Nonporous Substrates: 250 g/L.
6. Sealant Primers for Porous Substrates: 775 g/L.
7. Modified Bituminous Sealant Primers: 500 g/L.
8. Other Sealant Primers: 750 g/L.

B. Low-Emitting Materials:

1. Exterior reactive sealants shall have a VOC content of not more than 50 g/L or 4 percent by weight, whichever is greater.
2. Other exterior caulks and sealants shall have a VOC content of not more than 30 g/L or 2 percent by weight, whichever is greater.
3. Interior sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Compatibility: Provide joint sealants, joint fillers, and other related materials that are compatible with one another and with joint substrates under service and application conditions.

D. Sealant for Use in Building Expansion Joints**, One of the Following**:

1. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 50; for Use NT.

   a. Products: **One of the following:**

      1) BASF Building Systems; Omniseal 50.
      2) Dow Corning Corporation; **795**.
      3) GE Advanced Materials - Silicones; **SilGlaze II SCS2800.**
      4) May National Associates, Inc.; Bondaflex Sil 295.
      5) Pecora Corporation; **895**.
      6) Polymeric Systems, Inc.; PSI-641.
      7) Sika Corporation, Construction Products Division; SikaSil-C995.
      8) Tremco Incorporated; **Spectrem 2**.

2. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 100/50; for Use NT.

   a. Products: **One of the following:**

      1) Dow Corning Corporation; **790**.
      2) GE Advanced Materials - Silicones; SilPruf LM SCS2700.
      3) May National Associates, Inc.; **Bondaflex Sil 290**.
      4) Pecora Corporation; **301 NS**.
      5) Sika Corporation, Construction Products Division; SikaSil-C990.
      6) Tremco Incorporated; **Spectrem 1**.

E. Sealant for General Exterior Use Where Another Type Is Not Specified**, One of the Following**:

1. Single-component, nonsag polysulfide sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.

   a. Products: **One of the following:**

      1) Pacific Polymers International, Inc.; Elastoseal 230 Type I.
      2) W. R. Meadows, Inc.; Deck-O-Seal One Step.

2. Single-component, neutral-curing silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT.

   a. Products: **One of the following:**

      1) Dow Corning Corporation; 799.
      2) GE Advanced Materials - Silicones; **UltraGlaze SSG4000.**
      3) May National Associates, Inc.; **Bondaflex Sil 200 GPN**.
      4) Polymeric Systems, Inc.; PSI-631.
      5) Schnee-Morehead, Inc.; SM5731 Poly-Glaze Plus.

6) Tremco Incorporated; **Proglaze SSG**.

3. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; and for Use NT.

a. Products: **One of the following:**

1) BASF Building Systems; **Sonolastic NP1**.
2) Bostik, Inc.; Chem-Calk **900**.
3) May National Associates, Inc.; **Bondaflex PUR 25.**
4) Pacific Polymers International, Inc.; Elasto-Thane 230 Type II.
5) Pecora Corporation; Dynatrol I-XL.
6) Polymeric Systems, Inc.; Flexiprene 1000.
7) Schnee-Morehead, Inc.; **Permathane SM7100**.
8) Sika Corporation, Construction Products Division; Sikaflex - 1a.
9) Tremco Incorporated; **Dymonic**.

F. Sealant for Exterior Traffic-Bearing Joints, Where Slope Precludes Use of Pourable Sealant:

1. Single-component, nonsag urethane sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use T.

a. Products: **One of the following:**

1) BASF Building Systems; **Sonolastic NP1**.
2) May National Associates, Inc.; Bondaflex PUR 40 FC.
3) Pacific Polymers International, Inc.; Elasto-Thane 230 Type II.
4) Sika Corporation, Construction Products Division; Sikaflex - 1a.
5) Tremco Incorporated; Vulkem 116.

G. Sealant for Exterior Traffic-Bearing Joints, Where Slope Allows Use of Pourable Sealant:

1. Single-component, pourable urethane sealant, ASTM C 920, Type S; Grade P; Class 25; for Use T.

a. Products: **One of the following:**

1) BASF Building Systems; Sonolastic SL 1.
2) Bostik, Inc.; Chem-Calk 950.
3) May National Associates, Inc.; Bondaflex PUR 35 SL.
4) Pecora Corporation; Urexpan NR-201.
5) Polymeric Systems, Inc.; Flexiprene 952.
6) Schnee-Morehead, Inc.; Permathane SM7101.
7) Sika Corporation. Construction Products Division; Sikaflex - 1CSL.
8) Tremco Incorporated; Vulkem 45.

H. Sealant for Use in Interior Joints in Ceramic Tile and Other Hard Surfaces in Kitchens and Toilet Rooms and Around Plumbing Fixtures:

1. Single-component, mildew-resistant silicone sealant, ASTM C 920, Type S; Grade NS; Class 25; for Use NT; formulated with fungicide.

a. Products: **One of the following:**

1) BASF Building Systems; Omniplus.
2) Dow Corning Corporation; 786 Mildew Resistant.
3) GE Advanced Materials - Silicones; Sanitary SCS1700.
4) May National Associates, Inc.; Bondaflex Sil 100 WF.
5) Pecora Corporation; 898.
6) Tremco Incorporated; Tremsil 200 Sanitary.

I. Sealant for Interior Use at Perimeters of Door and Window Frames:

1. Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

a. Products: **One of the following:**

1) BASF Building Systems; Sonolac.
2) Bostik, Inc.; Chem-Calk 600.
3) May National Associates, Inc.; **Bondaflex 600**.
4) Pecora Corporation; AC-20+.
5) Schnee-Morehead, Inc.; SM 8200.
6) Tremco Incorporated; Tremflex 834.

J. Acoustical Sealant:

1. Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834 that effectively reduces airborne sound transmission as demonstrated by testing according to ASTM E 90.

a. Products: **One of the following:**

1) Pecora Corporation; **AC-20 FTR**
2) USG Corporation; SHEETROCK Acoustical Sealant.

2.2 MISCELLANEOUS MATERIALS

A. Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

D. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with ASTM C 1193.

B. Install sealant backings to support sealants during application and to produce cross-sectional shapes and depths of installed sealants that allow optimum sealant movement capability.

C. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

D. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal perimeters, control joints, openings, and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions. Comply with ASTM C 919.

END OF SECTION 079200

SECTION 081416 - FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Samples for **factory-finished** doors.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 Manufacturers: **One of the following:**

A. Eggers Industries.

B. Oregon Door

C. Marlite.

D. Marshfield Door Systems, Inc.

E. Mohawk Flush Doors, Inc.; a Masonite company.

F. **Or Approved Equivalent**.

2.2 DOOR CONSTRUCTION, GENERAL

A. Quality Standard: WDMA I.S.1-A.

B. Low-Emitting Materials: Provide doors made with adhesives and composite wood products that do not contain urea formaldehyde.

C. WDMA I.S.1-A Performance Grade:

1. Heavy Duty unless otherwise indicated.

D. Particleboard-Core Doors: Provide **blocking in particleboard cores or provide** structural composite lumber cores instead of particleboard cores for doors with **exit devices or protection plates**.

2.3 FLUSH WOOD DOORS

A. Doors for Opaque Finish:

1. Interior Solid-Core Doors: **Standard** grade, **five**-ply, structural composite lumber cores.

a. Faces: **Medium-density overlay**.

2.4 FABRICATION AND FINISHING

A. Factory fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.

C. Cut and trim openings to comply with referenced standards.

1. Trim light openings with moldings indicated.
2. Factory install glazing in doors indicated to be factory finished.
3. Factory install louvers in prepared openings.

D. Factory finish doors indicated for opaque finish with manufacturer's pre-primed standard finish.

1. Field finish doors with paint manufactures standard finish.
   a. Sheen: **Semigloss**.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Align **and fit** doors in frames with uniform clearances and bevels. **Machine doors for hardware. Seal cut surfaces after fitting and machining.**

B. Clearances: As follows unless otherwise indicated:

1. 1/8 inch at heads, jambs, and between pairs of doors.
2. 1/8 inch from bottom of door to top of decorative floor finish or covering.
3. 1/4 inch from bottom of door to top of threshold.

C. Repair, refinish, or replace factory-finished doors damaged during installation, as directed by Architect.

END OF SECTION 081416

SECTION 081433 - STILE AND RAIL WOOD DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 STILE AND RAIL DOORS

A. Safety Glass: Comply with testing requirements in 16 CFR 1201, for Category II materials.

B. Interior Doors: Stock doors complying with WDMA I.S.6, **Standard** grade made from **manufacturer's standard softwood species with panels of same species or a wood-based panel product** with **flat** panels.

1. Manufacturers: **One of the following:**
   a. Eggers Industries.
   b. Oregon Door
   c. Marlite.
   d. Marshfield Door Systems, Inc.
   e. Mohawk Flush Doors, Inc.; a Masonite company.
   f. Or Approved Equivalent.
2. Glass: Uncoated, clear, **fully tempered float glass, 5.0 mm thick.**

2.2 FABRICATION AND FINISHING

A. Factory-fit doors to suit frame-opening sizes and to comply with referenced quality standard.

1. Provide 1/8-inch clearance at jambs, heads, and meeting stiles and 1/2 inch at bottom. At thresholds, provide 3/8-inch clearance.
2. Comply with NFPA 80 for fire-resistance-rated doors.

B. Factory-machine doors for hardware that is not surface applied.

C. Glaze doors at factory.

D. Factory-finish wood doors with manufacturer's standard pre-primed finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install fire-rated wood door frames level, plumb, true, and aligned with adjacent materials. Countersink fasteners, fill surface flush, and sand smooth.

B. Install fire-rated doors to comply with NFPA 80.

C. Align and fit doors in frames with uniform clearances and bevels indicated below. Machine doors for hardware. Seal cut surfaces after fitting and machining.

1. Provide 1/8-inch clearance at jambs, heads, and meeting stiles and 1/8 inch at bottom. At thresholds, provide 1/4-inch clearance from bottom of door.

D. Align factory-fitted doors in frames for uniform clearances.

END OF SECTION 081433

SECTION 081613 - FIBERGLASS DOORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Warranties: Manufacturer's standard written warranty, signed by manufacturer agreeing to promptly repair or replace products that fail in materials or workmanship for the life of the installation.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 FIBERGLASS DOORS

A. Basis-of-Design Product: **Jeld-Wen; Design Pro Fiberglass** or a comparable product of one of the following:
1. JELD-WEN, Inc.
2. Milgard Windows, Inc.
3. Marvin
4. Anderson

B. Performance Requirements: Comply with ENERGY STAR product labeling program.

C. Faces: Fiberglass-reinforced plastic, molded to panel configuration indicated, with **smooth** finish.

1. Panel Configuration: **Six panel**.

D. Stiles, Rails, and Blocking: Structural composite lumber, not less than 1-1/4-inch wide stiles and 2-1/2-inch wide rails. Treat bottom rails with water-repellant preservative. Provide 20-inch lock blocks.

E. Core: Polyurethane foam.

F. Glass: Uncoated, clear, **insulating-glass units made from two lites of 3.0-mm-thick, fully tempered glass with 1/4-inch interspace**.

G. Factory-fit doors to suit frame-opening sizes indicated and to comply with clearances specified.

1. Provide 1/8-inch clearance at jambs, heads, and meeting stiles. At thresholds, provide 3/8-inch clearance.
2. Comply with NFPA 80 for fire-resistance-rated doors.

H. Factory-machine doors for hardware that is not surface applied. Locate hardware to comply with DHI-WDHS-3.

I. Factory-finish doors with manufacturer's standard opaque finish.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install doors level, plumb, true, and aligned with frames with uniform clearances.

B. Align **and fit** doors in frames with uniform clearances and bevels. **Machine doors for hardware. Seal cut surfaces after fitting and machining.**

END OF SECTION 081613

SECTION 085000 - WINDOWS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 VINYL WINDOWS

A. Manufacturers: **One of the following:**

B. Basis-of-Design Product: **Milgard; Replacement Vinyl Windows** or a comparable product of one of the following:
1. JELD-WEN, Inc.
2. Milgard Windows, Inc.
3. Pella Corporation.
4. Weather Shield Mfg., Inc.

C. Window Types: **The following types:**
1. Horizontal sliding.
2. Or as indicated on drawings.

D. Window Color: **White**.

E. Equip units with removable grilles as indicated, attach to inside face of each lite.

F. Equip units with window screens.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Set units level, plumb, and true to line, without warp or rack of frames and panels. Provide proper support and anchor securely in place.

B. Set sill members in bed of sealant or with gaskets, as indicated, to provide weathertight construction.

C. Adjust operating panels, screens, and hardware to provide a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.

D. Clean glass **and vinyl** surfaces immediately after installing windows. Remove nonpermanent labels from glass surfaces.

END OF SECTION 085000

SECTION 088000 - GLAZING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: **Product Data**.

B. Glazing Publications: Comply with published recommendations of glass product manufacturers and organizations below, unless more stringent requirements are indicated.

1. GANA Publications: GANA's "Glazing Manual."
2. AAMA Publications: AAMA GDSG-1, "Glass Design for Sloped Glazing," and AAMA TIR-A7, "Sloped Glazing Guidelines."
3. IGMA Publication for Sloped Glazing: IGMA TB-3001, "Guidelines for Sloped Glazing."
4. IGMA Publication for Insulating Glass: SIGMA TM-3000, "North American Glazing Guidelines for Sealed Insulating Glass Units for Commercial and Residential Use."

C. Safety Glazing Labeling: Where safety glazing labeling is indicated, permanently mark glazing with certification label of **the SGCC or another certification agency acceptable to authorities having jurisdiction**. Label shall indicate manufacturer's name, type of glass, thickness, and safety glazing standard with which glass complies.

D. Insulating-Glass Certification Program: Permanently marked either on spacers or on at least one component lite of units with appropriate certification label of IGCC.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 GLASS, GENERAL

A. Safety Glass: Category II materials complying with testing requirements in 16 CFR 1201. Provide safety glazing labeling where safety glass is indicated.

2.2 GLASS PRODUCTS

A. Float Glass: ASTM C 1036, Type I, Quality-Q3.

B. Heat-Treated Float Glass: ASTM C 1048; Type I; Quality-Q3.

C. Reflective-Coated Glass: ASTM C 1376, coated by [**pyrolytic**] process.

D. Insulating-Glass Units: Factory-assembled units consisting of sealed lites of glass separated by a dehydrated interspace, qualified according to ASTM E 2190.

2.3 MONOLITHIC-GLASS TYPES

A. Glass Type **GL-A**: Clear **fully tempered float glass**.

1. Thickness: **6.0 mm**.
2. Provide safety glass.

2.4 INSULATING-GLASS TYPES

A. Glass Type **GL-B**: Low-e-coated, clear insulating glass.

1. Overall Unit Thickness: **5/8 inch**.
2. Thickness of Each Glass Lite: **6.0 mm**.
3. Outdoor Lite: **Float glass**.
4. Interspace Content: **Air**.
5. Indoor Lite: **Fully tempered float glass**.
6. Winter Nighttime U-Factor: **0.35** maximum.
7. Summer Daytime U-Factor: **0.35** maximum.
8. Solar Heat Gain Coefficient: **0.35** maximum.
9. Provide safety glass.

2.5 GLAZING SEALANTS

A. Glazing Sealant: Neutral-curing silicone glazing sealant complying with ASTM C 920, Type S, Grade NS, Class 25, Use NT.

1. Products: **One of the following:**

a. Dow Corning Corporation; 799.
b. GE Advanced Materials - Silicones; **UltraGlaze SSG4000**.
c. May National Associates, Inc.; **Bondaflex Sil 200 GPN**.
d. Polymeric Systems, Inc.; PSI-631.
e. Schnee-Morehead, Inc., an ITW company; SM5731 Poly-Glaze Plus.
f. Tremco Incorporated; **Proglaze SSG**.

B. Low-Emitting Materials: Sealants shall have a VOC content of not more than 250 g/L.

C. Low-Emitting Materials: Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

PART 3 - EXECUTION

3.1 INSTALLATION

A. Comply with combined recommendations of manufacturers of glass, sealants, gaskets, and other glazing materials, unless more stringent requirements are contained in GANA's "Glazing Manual."

B. Set glass lites in each series with uniform pattern, draw, bow, and similar characteristics.

C. Remove nonpermanent labels, and clean surfaces immediately after installation.

END OF SECTION 088000

SECTION 088300 - MIRRORS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: **Product Data**.

B. Glazing Publications: Comply with the following published recommendations:

1. GANA's "Glazing Manual" unless more stringent requirements are indicated. Refer to this publication for definitions of glass and glazing terms not otherwise defined in this Section or in referenced standards.
2. GANA Mirror Division's "Mirrors, Handle with Extreme Care: Tips for the Professional on the Care and Handling of Mirrors."

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 MIRRORS, GENERAL

A. Manufacturers: **One of the following:**

1. Arch Aluminum & Glass Co., Inc.
2. Avalon Glass and Mirror Company.
3. Binswanger Mirror; a division of Vitro America, Inc.
4. D & W Incorporated
5. Donisi Mirror Company.
6. Gardner Glass, Inc.
7. Gilded Mirrors, Inc.
8. Guardian Industries.
9. Head West.
10. Independent Mirror Industries, Inc.
11. Lenoir Mirror Company.
12. Maran-Wurzell Glass & Mirror.
13. National Glass Industries.
14. Stroupe Mirror Co., Inc.
15. Sunshine Mirror; Westshore Glass Corp.
16. Virginia Mirror Company, Inc.

17. Walker Glass Co., Ltd.

B. Glass Mirrors, General: ASTM C 1503**; manufactured using copper-free, low-lead mirror coating process**.

C. Safety Glazing Products: For **film-backed** mirrors, provide products complying with testing requirements in 16 CFR 1201 for Category II materials.

2.2 MATERIALS

A. Tempered **Clear** Glass: Mirror Glazing Quality, for blemish requirements; and comply with ASTM C 1048 for Kind FT, Condition A, tempered float glass before silver coating is applied; **4.0-mm** nominal thickness.

B. Mirror Mastic: An adhesive setting compound, asbestos free, produced specifically for setting mirrors and certified by both mirror manufacturer and mastic manufacturer as compatible with glass coating and substrates on which mirrors will be installed.

1. Manufacturers: **One of the following:**

   a. Franklin International; Titebond Division.
   b. Laurence, C. R. Co., Inc.
   c. Macco Adhesives; Liquid Nails Division.
   d. OSI Sealants, Inc.
   e. Palmer Products Corporation.
   f. Pecora Corporation.
   g. Royal Adhesives & Sealants; Gunther Mirror Mastics Division.
   h. Sommer & Maca Industries, Inc.

2. Low-Emitting Materials: Mastic shall have a VOC content of not more than 70 g/L.
3. Low-Emitting Materials: Mastic shall comply with Green Seal's GS-36 and with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

C. Film Backing for Safety Mirrors: Film backing and pressure-sensitive adhesive; both compatible with mirror backing paint as certified by mirror manufacturer.

D. Film Backing for Safety Mirrors: Film backing and pressure-sensitive adhesive; both compatible with mirror backing paint as certified by mirror manufacturer.

E. Aluminum J-Channels: Aluminum extrusions with a return deep enough to produce a glazing channel to accommodate mirrors of thickness indicated and in lengths required to cover edges of each mirror in a single piece.

1. Finish: **Clear** bright anodized.

2.3 FABRICATION

A. Mirror Edge Treatment: **Flat polished**.

1. Seal edges of mirrors with edge sealer after edge treatment to prevent chemical or atmospheric penetration of glass coating.

B. Film-Backed Safety Mirrors: Apply film backing with adhesive coating over mirror backing paint as recommended in writing by film-backing manufacturer.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Provide a minimum air space of 1/8 inch between back of mirrors and mounting surface for air circulation between back of mirrors and face of mounting surface.

B. Wall-Mounted Mirrors: Install mirrors with **mastic and** mirror hardware. Attach mirror hardware securely to mounting surfaces with mechanical fasteners installed so heads do not impose point loads on backs of mirrors.

1. Top and Bottom Aluminum J-Channels: Provide setting blocks 1/8 inch thick by 4 inches long at quarter points.
2. Mirror Clips: Place a felt or plastic pad between mirror and each clip. Locate clips so they are symmetrically placed and evenly spaced.
3. Apply mastic to comply with mastic manufacturer's written instructions for coverage and to allow air circulation between back of mirrors and face of mounting surface.

C. Remove nonpermanent labels, and clean surfaces immediately after installation.

END OF SECTION 088300

SECTION 092900 - GYPSUM BOARD

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. STC-Rated Assemblies: Provide materials and construction identical to those tested in assemblies per ASTM E 90 and classified per ASTM E 413 by a qualified independent testing and inspecting agency.

2.2 PANEL PRODUCTS

A. Provide in maximum lengths available to minimize end-to-end butt joints.

B. Interior Gypsum Board: ASTM C 1396/C 1396M, in thickness indicated, with manufacturer's standard edges. **Type X unless otherwise indicated, Sag-resistant type for ceiling surfaces**.

1. Manufacturers: **One of the following:**

    a. American Gypsum.
    b. Georgia-Pacific Gypsum LLC.
    c. National Gypsum Company.
    d. PABCO Gypsum.
    e. USG Corporation.

C. Water-Resistant Gypsum Backing Board: ASTM C 1396/C 1396M, in thickness indicated. **Type X unless otherwise indicated**.

1. Manufacturers: **One of the following:**

    a. American Gypsum.
    b. Georgia-Pacific Gypsum LLC.
    c. PABCO Gypsum.
    d. Temple-Inland.
    e. USG Corporation.

D. Cementitious Backer Units: ANSI A118.9, ASTM C 1288, or ASTM C 1325.

1. Products: **One of the following:**

    a. C-Cure; C-Cure Board 990.
    b. CertainTeed Corp.; FiberCement **Underlayment**.
    c. Custom Building Products; **Wonderboard**.
    d. FinPan, Inc.; **Util-A-Crete Concrete Backer Board**.
    e. James Hardie Building Products, Inc.; **Hardiebacker** .
    f. National Gypsum Company, Permabase Cement Board.
    g. USG Corporation; DUROCK Cement Board.

2.3 ACCESSORIES

A. Trim Accessories: ASTM C 1047, formed from galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized-steel sheet. For exterior trim, use accessories formed from hot-dip galvanized-steel sheet, plastic, or rolled zinc.

1. Provide cornerbead at outside corners unless otherwise indicated.
2. Provide LC-bead (J-bead) at exposed panel edges.
3. Provide control joints where indicated.

B. Joint-Treatment Materials: ASTM C 475/C 475M.

1. Joint Tape: Paper unless otherwise recommended by panel manufacturer.
2. Joint Compounds: **Setting-type compounds**
3. Cementitious Backer Unit Joint-Treatment Materials: Products recommended by cementitious backer unit manufacturer.

C. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Adhesive shall have a VOC content of 50 g/L or less.
2. Adhesive shall comply with Green Seal's GS-36 and with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

D. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant complying with ASTM C 834.

1. Sealants shall have a VOC content of 250 g/L or less.

2. Sealants shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers."

E. Sound-Attenuation Blankets: ASTM C 665, Type I (unfaced).

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install gypsum board to comply with ASTM C 840.

1. Isolate gypsum board assemblies from abutting structural and masonry work. Provide edge trim and acoustical sealant.
2. Single-Layer Fastening Methods: Fasten gypsum panels to supports with screws.
3. Multilayer Fastening Methods: Fasten base layers **and face layer separately to supports with screws**.

B. Install cementitious backer units to comply with ANSI A108.11.

C. Fire-Resistance-Rated Assemblies: Comply with requirements of listed assemblies.

D. Finishing Gypsum Board: ASTM C 840.

1. At concealed areas, unless a higher level of finish is required for fire-resistance-rated assemblies, provide Level 1 finish: Embed tape at joints.
2. At substrates for tile, provide Level 2 finish: Embed tape and apply separate first coat of joint compound to tape, fasteners, and trim flanges.
3. Unless otherwise indicated, provide Level 4 finish: Embed tape and apply separate first, fill, and finish coats of joint compound to tape, fasteners, and trim flanges.

E. Glass-Mat, Water-Resistant Backing Panels: Finish according to manufacturer's written instructions.

F. Cementitious Backer Units: Finish according to manufacturer's written instructions.

G. Texture Finish Application: Mix and apply finish using powered spray equipment, to produce a uniform texture free of starved spots or other evidence of thin application or of application patterns.

END OF SECTION 092900

SECTION 099000 - PAINTING AND COATING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals:

1. Product Data.
2. Samples.

B. Mockups: Full-coat finish Sample of each type of coating, color, and substrate, applied where directed.

C. Extra Materials: Deliver to Owner **1 gal.** of each color and type of finish coat paint used on Project, in containers, properly labeled and sealed.

PART 2 - PRODUCTS

2.1 PAINT

A. Manufacturers: **One of the following:**
1. Benjamin Moore & Co.
2. Dunn-Edwards Corporation.
3. Frazee Paint.
4. ICI Paints.
5. Kelly-Moore Paints.
6. PPG Architectural Finishes, Inc.
7. Sherwin-Williams Company (The).
8. Zinsser.

B. MPI Standards: Provide materials that comply with MPI standards indicated and listed in its "MPI Approved Products List."

1. Exterior Painting Materials:

   a. Block Filler, Latex: MPI #4.
   b. Primer, Latex: MPI #6.
   c. Latex, Exterior Semigloss (Gloss Level 5): MPI #11.

2. Interior Painting Materials:
   a. Primer, Latex, for Interior Wood: MPI #39.
   b. Primer Sealer, Institutional Low Odor/VOC: MPI #149.
   c. Latex, Interior, Semigloss, (Gloss Level 5): MPI #54.
   d. Latex, Exterior Low Sheen (Gloss Level 3-4): MPI #15.

C. Material Compatibility: Provide materials that are compatible with one another and with substrates.

1. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

D. Use **interior** paints and coatings that comply with the following limits for VOC content:

1. Flat Paints and Coatings: **50** g/L.
2. Nonflat Paints, Coatings: **150** g/L.
3. Dry-Fog Coatings: **400** g/L.
4. Primers, Sealers, and Undercoaters: **200** g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: **250** g/L.
6. Zinc-Rich Industrial Maintenance Primers: **340** g/L.
7. Pretreatment Wash Primers: **420** g/L.
8. Clear Wood Finishes, Varnishes: **350** g/L.
9. Clear Wood Finishes, Lacquers: **550** g/L.
10. Floor Coatings: **100** g/L.
11. Shellacs, Clear: **730** g/L.
12. Shellacs, Pigmented: **550** g/L.
13. Stains: **250** g/L.

E. Colors: **As selected or scheduled**.

PART 3 - EXECUTION

3.1 PREPARATION

A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Remove hardware, lighting fixtures, and similar items that are not to be painted. Mask items that cannot be removed. Reinstall items in each area after painting is complete.

C. Clean and prepare surfaces in an area before beginning painting in that area. Schedule painting so cleaning operations will not damage newly painted surfaces.

3.2 APPLICATION

A. Comply with recommendations in MPI's "MPI Architectural Painting Specification Manual" applicable to substrates indicated.

B. Paint exposed surfaces**, new and existing,** unless otherwise indicated.

1. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces.
2. Paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint the back side of access panels.
4. Color-code mechanical piping in accessible ceiling spaces.

5. Do not paint prefinished items, items with an integral finish, operating parts, and labels unless otherwise indicated.

C. Apply paints according to manufacturer's written instructions.

1. Use brushes only for exterior painting and where the use of other applicators is not practical.
2. Use rollers for finish coat on interior walls and ceilings.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

1. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

E. Apply stains and transparent finishes to produce surface films without color irregularity, cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other imperfections. Use multiple coats to produce a smooth surface film of even luster.

3.3 EXTERIOR PAINT APPLICATION SCHEDULE

A. Manufacture: Pittsburg paint; Manor Hall or equal

B. Concrete:

1. **Semigloss** Latex: **Two coats** over latex block filler: MPI EXT 4.2A.

C. Galvanized Metal:

1. **Semigloss** Latex: **Two coats** over waterborne galvanized-metal primer: MPI EXT 5.3H.

D. Wood: Including **wood trim, doors, windows, wood siding**.

1. **Semigloss** Latex: **Two coats** over latex primer: MPI EXT 6.3L.

3.4 INTERIOR PAINT APPLICATION SCHEDULE

A. Manufacture: Pittsburg paint; Manor Hall or equal

B. Wood: Including **wood trim, doors**.

1. Latex: **Two coats** over latex primer for wood: MPI INT 6.3T.

C. **Gypsum Board**:

1. Latex: **Two coats** over latex primer/sealer: MPI INT 9.2A.

D. Spray-Textured Ceilings:

1. Eggshell Latex: One coat over primer/sealer: MPI INT 9.1A

END OF SECTION 099000

SECTION 102113 - TOILET COMPARTMENTS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 TOILET COMPARTMENTS AND SCREENS

A. Manufacturers:

1. Accurate Partitions Corporation.
2. Bobrick Washroom Equipment, Inc.
3. Bradley Corporation; Mills Partitions.
4. Marlite.

B. Accessibility Requirements: Comply with **the U.S. Architectural & Transportation Barriers Compliance Board's Accessibility Guidelines and CBC** for toilet compartments designated as accessible.

2.2 MATERIALS

A. Solid-Polymer: High-density polyethylene with homogenous color, not less than 1 inch thick, with seamless construction and eased edges.

1. Flame-Spread Index: **25** or less per ASTM E 84.
2. Color: **As selected by Architect**.

B. Pilaster Shoes and Sleeves (Caps): **Stainless steel**, not less than 3 inches high.

C. Brackets: **Continuous**.

1. Material: **Manufacturer's standard**.

2.3 FABRICATION

A. Toilet Compartments: **Overhead braced and floor anchored**.

B. Solid-Polymer Units: Provide aluminum heat-sink strips at exposed bottom edges of panels and doors.

C. Doors: Unless otherwise indicated, 36-inch- wide in-swinging doors with a minimum 32-inch-wide clear opening for compartments indicated to be accessible to people with disabilities.

D. Door Hardware: **Clear-anodized aluminum or cast-zinc alloy (zamac)**]. Provide units that comply with accessibility requirements of authorities having jurisdiction at compartments indicated to be accessible to people with disabilities.

1. Hinges: Self-closing type, adjustable to hold door open at any angle up to 90 degrees.
2. Latches and Keepers: **Surface-mounted** unit designed for emergency access and with combination rubber-faced door strike and keeper.
3. Coat Hook: Combination hook and rubber-tipped bumper, sized to prevent door from hitting compartment-mounted accessories.
4. Door Bumper: Rubber-tipped bumpers at out-swinging doors or entrance screen doors.
5. Door Pull: Provide at out-swinging doors. Provide units on both sides of doors at compartments indicated to be accessible to people with disabilities.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units rigid, straight, level, and plumb, with not more than 1/2 inch between pilasters and panels and not more than 1 inch between panels and walls. Provide brackets, pilaster shoes, bracing, and other components required for a complete installation. Use theft-resistant exposed fasteners finished to match hardware. Use sleeve nuts for through-bolt applications.

1. Stirrup Brackets: Align brackets at pilasters with brackets at walls. **Locate wall brackets so holes for wall anchors occur in tile joints.**
2. Set hinges on in-swinging doors to hold open approximately 30 degrees from closed position when unlatched. Set hinges on out-swinging doors and swing doors in entrance screens to return to fully closed position.

END OF SECTION 102113

SECTION 102800 - TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 TOILET AND BATH ACCESSORIES

A. Manufacturers: **One of the following:**

B. Basis-of-Design Product: **Product indicated on Drawings** or a comparable product of one of the following:
1. American Specialties, Inc.
2. Bobrick Washroom Equipment, Inc.
3. Bradley Corporation.

2.2 MATERIALS

A. Stainless Steel: ASTM A 666, Type 304, No. 4 finish (satin), 0.0312-inch minimum nominal thickness unless otherwise indicated.

B. Brass: ASTM B 19, ASTM B 16, or ASTM B 30.

C. Aluminum: ASTM B 221, Alloy 6063-T6 or 6463-T6.

D. Sheet Steel: ASTM A 1008/A 1008M, 0.0359-inch minimum nominal thickness.

E. Galvanized-Steel Sheet: ASTM A 653/A 653M, G60.

F. Chromium Plating: ASTM B 456, Service Condition Number SC 2 (moderate service).

G. Baked-Enamel Finish: Factory-applied, gloss-white, baked-acrylic-enamel coating.

H. Tempered Glass: ASTM C 1048, Kind FT (fully tempered).

I. Mirrors: ASTM C 1503, Mirror Glazing Quality, clear-glass mirrors, nominal 6.0 mm thick.

J. Galvanized-Steel Mounting Devices: ASTM A 153/A 153M, hot-dip galvanized after fabrication.

K. Fasteners: Screws, bolts, and other devices of same material as accessory unit, tamper and theft resistant when exposed, and of galvanized steel when concealed.

L. Keys: Provide universal keys for internal access to accessories for servicing and resupplying. Provide minimum of [**six**] keys to Owner's representative.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install accessories using fasteners appropriate to substrate indicated and recommended by unit manufacturer. Install units level, plumb, and firmly anchored in locations and at heights indicated.

1. Install grab bars to withstand a downward load of at least 250 lbf, when tested according to method in ASTM F 446.

B. Adjust accessories for unencumbered, smooth operation and verify that mechanisms function properly. Replace damaged or defective items. Remove temporary labels and protective coatings.

END OF SECTION 102800

SECTION 105723 - CLOSET AND UTILITY SHELVING

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

B. Verify dimensions by field measurements before ordering.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 WIRE CLOSET SHELVING

A. Manufacturers:

1. Closetmaid Corporation.
2. Rubbermaid.
3. Schulte Corporation.

B. Structural Performance: Wire closet shelving system shall be capable of supporting the following weight per unit length:

1. With shelf supported by walls at both ends:

   a. Shelves 36 Inches or Less in Length: 60 lb/ft..
   b. Shelves 37 to 48 Inches in Length: 55 lb/ft..
   c. Shelves 49 to 60 Inches in Length: 50 lb/ft..
   d. Shelves 61 Inches or More in Length: 40 lb/ft..

2. With shelf supported by a wall at one end only:

   a. Shelves 36 Inches or Less in Length: 50 lb/ft..
   b. Shelves 37 to 48 Inches in Length: 45 lb/ft..
   c. Shelves 49 to 60 Inches in Length: 40 lb/ft..
   d. Shelves 61 Inches or More in Length: 35 lb/ft..

3. With shelf not supported by a wall at either end:

a. Shelves 36 Inches or Less in Length: 45 lb/ft..
b. Shelves 37 to 48 Inches in Length: 40 lb/ft..
c. Shelves 49 to 60 Inches in Length: 35 lb/ft..
d. Shelves 61 Inches or More in Length: 30 lb/ft..

C. Wire closet shelving, made from steel wire spaced not more than **1 inch** o.c. and welded to longitudinal steel wire rods. Provide longitudinal wire rods at shelf edges and corners of lips, with not less than four longitudinal wire rods per shelf. Provide **12-inch- wide shelves unless otherwise indicated**. Provides units complete with brackets, fasteners, end caps, and accessories indicated.

1. Provide units mounted on adjustable tracks that allow shelf configurations to be modified. Provide units in quantities and sizes indicated.
2. Provide units with rod for clothes hangers **unless otherwise indicated**.
3. Provide units with longitudinal wire rods on tops of shelves to allow objects to slide easily along length of shelf.

2.2 MATERIALS

A. Steel Wire: ASTM A 853.

2.3 FINISHES

A. Wire Shelving Finish: White **epoxy, polyester, or vinyl** applied over cleaned and conversion-coated metal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install units in configurations indicated, complete with accessories indicated, and ready for use.

B. Install units level, plumb, and true to line, without warp or rack and anchor securely in place.

C. Repair, refinish, or replace wire closet shelving damaged during installation, as directed by Architect.

END OF SECTION 105723

SECTION 113100 - RESIDENTIAL APPLIANCES

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 RESIDENTIAL APPLIANCES

A. Regulatory Requirements: Comply with the following:

1. NFPA: Provide electrical appliances listed and labeled as defined in NFPA 70, by a qualified testing agency, and marked for intended location and application.
2. ANSI: Provide gas-burning appliances that comply with ANSI Z21 Series standards.

B. Accessibility: Where residential appliances are indicated to comply with accessibility requirements, comply with **the U.S. Architectural & Transportation Barriers Compliance Board's Accessibility Guidelines** and **CBC**.

C. **Gas** Rangetop:

1. Manufacturers: **One of the following:**
2. Basis-of-Design Product: **Product indicated on Drawings** or a comparable product of one of the following:
   a. BSH Home Appliances Corporation (Thermador).
   b. Dacor, Inc.
   c. General Electric Company (GE).
   d. Jenn-Air; a division of Whirlpool Corporation.
   e. Viking Range Corporation.
   f. Whirlpool Corporation.
   g. Wolf Appliance, Inc.

D. Double Oven:

1. Manufacturers: **One of the following:**

2. Basis-of-Design Product: **Product indicated on Drawings** or a comparable product of one of the following:
   a. BSH Home Appliances Corporation (Thermador).
   b. Dacor, Inc.
   c. General Electric Company (GE).
   d. Jenn-Air; a division of Whirlpool Corporation.
   e. Viking Range Corporation.
   f. Whirlpool Corporation.
   g. Wolf Appliance, Inc.

E. Exhaust Hood:

1. Manufacturers: **One of the following:**
2. Basis-of-Design Product: **Product indicated on Drawings** or a comparable product of one of the following:
   a. BSH Home Appliances Corporation (Thermador).
   b. Dacor, Inc.
   c. General Electric Company (GE).
   d. Jenn-Air; a division of Whirlpool Corporation.
   e. Miele, Inc.
   f. Viking Range Corporation.
   g. Whirlpool Corporation.
   h. Wolf Appliance, Inc.

F. Refrigerator/Freezer:

1. Manufacturers: **One of the following:**
2. Basis-of-Design Product: **Owner provided Contractor installed**
3. Energy Performance: Provide appliances that qualify for the EPA/DOE ENERGY STAR product labeling program.

G. Clothes Washer:

1. Manufacturers: **One of the following:**
2. Basis-of-Design Product: **Owner provided Contractor installed**
3. Energy Performance: Provide appliances that qualify for the EPA/DOE ENERGY STAR product labeling program.

H. Clothes Dryer:

1. Manufacturers: **One of the following:**
2. Basis-of-Design Product: **Owner provided Contractor installed**
3. Energy Performance: Provide appliances that qualify for the EPA/DOE ENERGY STAR product labeling program.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Built-in Appliances: Securely anchor to supporting cabinetry or countertops with concealed fasteners. Verify that clearances are adequate for proper functioning and rough openings are completely concealed.

B. Freestanding Appliances: Place in final locations after finishes have been completed in each area. Verify that clearances are adequate to properly operate equipment.

C. Test each item of residential appliances to verify proper operation. Make necessary adjustments.

D. Verify that accessories required have been furnished and installed.

END OF SECTION 113100

SECTION 123661 - SIMULATED STONE COUNTERTOPS

PART 1 - GENERAL

1.1 SECTION REQUIREMENTS

A. Submittals: Product Data **and material Samples**.

1.2 REFERENCE STANDARDS

A. 2013 California Building Code

B. Title 24 California Code of Regulations

C. Refer to specifications, including, but not limited to Section 014200 - References.

PART 2 - PRODUCTS

2.1 SOLID-SURFACE-MATERIAL COUNTERTOPS

A. Countertops: **1/2-inch- thick, solid surface material**.

1. Edges **built up with solid surface material**.
2. Front: **Straight, slightly eased at top.**
3. Backsplash: **Straight, slightly eased at corner**.
4. Endsplash: **Matching backsplash**.

2.2 QUARTZ AGGLOMERATE COUNTERTOPS

A. Quartz Agglomerate Countertops: **3/4-inch** thick, quartz agglomerate **with front edge built up with same material**.

1. Front: **Radius edge with apron, 2 inches high with 3/8-inch radius**
2. Backsplash: **Straight, slightly eased at corner**.
3. Endsplash: **None**.

B. Quartz Agglomerate: Solid sheets consisting of quartz aggregates bound together with a matrix of filled plastic resin and complying with the "Physical Characteristics of Materials" Article of ANSI SS1.

1. Manufacturers: **One of the following:**

a. Cambria.
b. Cosentino USA.
c. E. I. du Pont de Nemours and Company.

d. LG Chemical, Ltd.
e. Meganite Inc.
f. Samsung Chemical USA, Inc.
g. Technistone USA, Inc.
h. Transolid, Inc.
i. Or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Install countertops according to manufacturer's written directions. Fasten to substrates with adhesive. Align adjacent surfaces. Seal seams and perimeter with mildew-resistant **silicone acrylic latex** sealant.

1. Seal edges of cutouts in particleboard subtops by saturating with varnish.

B. Install level and plumb to a tolerance of 1/8 inch in 8 feet.

END OF SECTION 123661